

Cultural Resource Management

One of DCR's core functions is the protection of natural and cultural resources. Cultural Resource Management (CMR) is carried out within the planning bureau and includes inventory, assessment, preservation and interpretation. As with natural resources, cultural resources may be negatively affected by agency actions and programs. Through good planning and compliance with applicable laws, DCR can ensure the preservation of significant cultural resources for generations to come.

Staffing

DCR employs a staff archaeologist and a several preservation planners with expertise in historic buildings and landscapes. Staff provide technical assistance and planning leadership, oversee preservation projects and regulatory review processes, conduct fieldwork and develop management plans. They are also the liaison between DCR and the State Historic Preservation Office (SHPO), which in Massachusetts is the Massachusetts Historical Commission (MHC).

Regulatory Compliance

Cultural resources are protected from state and federally funded or approved activities under several laws including, but not limited to:

- M.G.L. Ch 9 ss 26-27c as amended by St 1988 c. 254.
- M.G.L. Chapter 38, section 6B (Massachusetts Unmarked Burial law)
- Massachusetts Environmental Policy Act (MEPA)
- Section 106 of the National Preservation Act of 1966

To comply with these laws, DCR must consult with the State Historic Preservation Office whenever a state action has the potential to impact historic or archaeological resources. In Massachusetts the SHPO is the Massachusetts Historical Commission (MHC). Cultural Resource Management staff members are available to coordinate the consultation process. In planning projects and activities that are subject to MHC review, schedules must allow for a 30 day review process.

DEM (now the Division of State Parks and Recreation) executed a Programmatic Memorandum of Agreement (PMOA) with the MHC that allows for some categorical exemptions from the review process. The PMOA is managed through CRM staff.

The Baseline Inventory

CRM staff is engaged in an ongoing program of inventory, survey and evaluation of cultural and archaeological resources as well as the nomination of significant sites to the State and National Registers of Historic Places. This information is maintained in the Cultural Resource Inventory, a baseline record of cultural and archaeological resources within DCR facilities. The Inventory is used to avoid or minimize impacts to sensitive cultural resources areas as well as to identify opportunities to enhance and interpret historic sites.

Best Management Practices for Forestry

The protection of cultural resources fits well with the Massachusetts Forest Cutting Practices Act (FCPA) and its associated Best Management Practices, which if properly applied, should result in minimal soil compaction and erosion. In addition, some state agencies (e.g., the DWSP) have internal BMPs or requirements that go well beyond the FCPA, including the requirement that low-impact logging machinery be used in certain sensitive areas. It's likely that the greatest threat to cultural resources occurs on private lands, especially when forest cutting plans are not required or are not filed.

- *Internal Review of Proposed Silviculture Projects*

Without appropriate controls, forest management programs can be detrimental to archaeological resources. Modern harvesting methods employ a wide range of heavy machinery, some of which, because of weight distribution and/or tire characteristics, can do irreparable damage to prehistoric sites. Skidding logs can further disturb the soil and associated cultural resources. Operations also entail clearing areas for landings, turn-arounds, and access roads. Those archaeological sites that lie closest to the surface can be damaged by such activities. It is these same types of sites - those that are the youngest in time (i.e., the Early, Middle and Late Woodland) - that were most susceptible to destruction by the plow of the local farmer, and thus represent a relatively scarce piece of the archaeological record.

Accordingly, the foundation of EOE's Cultural Resource Management within the broader context of the Lower Worcester Plateau Ecoregion is a process for reviewing proposed silvicultural operations. The review involves evaluating and assessing the impacts that harvesting could have on archaeological resources should they exist at any given operation.

- *Timber Sale Prescription Forms*

When appropriate (e.g., when an operation is planned for a known or predicted sensitive archaeological site), the foresters responsible for managing state forestlands within the LWP ER should submit a Timber Sale Prescription Form to a professional Archaeologist for in-house review. The form should provide a detailed narrative of the proposed operation including: location and size, description of topography, forest cover and soils, goals of silvicultural operations, equipment limitations, important plant and wildlife communities, and hydrology. Known historic features should be added to the form.

- *Site-specific Review*

The primary analytical tool employed in the review of impacts to prehistoric archaeological sites is the evaluation of site location criteria.

Prehistoric Sites

At no time in prehistory did human populations roam haphazardly and endlessly across the landscape. For approximately 12,000 years local Native American populations adapted to the changing climatic and environmental conditions around them. During this time, Native Americans adapted their tool kit and strategies in order to take advantage of the new resources and opportunities the new environmental conditions afforded.

The key criteria for determining the archaeological sensitivity of a given site include: degree of slope, presence of well-drained soils and proximity to fresh water. Other variables such as aspect, availability of stone suitable for tool-making (i.e., soapstone in Petersham, argillites in the Connecticut River Valley, quartzite and quartz throughout the LWP ER), and elevation above sea level, may also be factors. When one

or more of these variables are met, the locations are considered to have been an attractive for Native American habitation or subsistence activities. They are thus potentially sensitive for the existence of prehistoric sites. Accordingly such areas are classified as highly sensitive or moderately sensitive for prehistoric resources, and specific guidelines may be required for harvesting in such areas.

Historic sites

As noted above, within the LWP ER there are several thousand historic archaeological sites, six regions that have been classified as significant historic landscapes, and over 1500 properties listed on the National Register. These types of resources typically are not as fragile as prehistoric archaeological sites, nevertheless, depending on their condition, significance and location they may require specific management strategies to ensure their protection.

- *Harvesting Restrictions and Limitations*

For those silvicultural operations that will occur in locations that have been classified as highly or moderately sensitive for prehistoric resources, restrictions are recommended on the time of year and the types of equipment and techniques used. By employing restrictions on the harvesting operations that minimize ground disturbance, a compromise is achieved that allows the harvest to occur, while affording some protection to whatever archaeological resources may lie buried below the ground.

The following are types of restrictions/limitations that may be recommended for highly sensitive areas:

- the harvest should occur during the winter with frozen soil conditions;
- skidding should not be permitted;
- chainsaw-felling and the use of forwarders for log removal may provide the best protection of sites
- where mechanical felling and processing is desired, considerations should be given to soil disturbance and compaction; e.g., three-wheeled 'tricycle' feller-bunchers may disturb the soil too much through frequent small-radius turns and high ground pressure, while tracked machines distribute machine weight and reduce compaction. Machines with extendable booms further increase options for protecting cultural resources, by reducing ground travel and compaction and allowing trees to be pulled away from cultural sites before being dropped.

For those proposed operations that are classified moderately sensitive, one or more of the above restrictions may be recommended. For those rugged upland, or previously disturbed areas that fail to satisfy the basic site location criteria, restrictions on the season of the proposed harvest or the type of equipment may not be appropriate.

In some cases, particularly with large acreage sales, portions of a lot may satisfy some, or all of the site location criteria, while other portions satisfy none. In those situations, restrictions may be recommended for the sensitive portion of the operation, while the above harvesting restrictions would not apply in the other portions.

- *Vegetation Management at Historic Sites*

Vegetation, if left to grow unchecked in and around stone foundations, and other historic structures like dams, raceways, etc., will ultimately destroy these archaeological features. Accordingly, a limited and selective program of vegetation management is recommended. This same limited program has been employed on historic sites in the former MDC Watersheds and its Reservations & Historic Sites.

Given limited resources, the control of vegetation growth in and around archaeological sites and historic buildings and structures is a high priority. The dislocation of foundation stones, and the spalling of cement caused by root activity are among the most immediate threats to some of the cultural resources of the Commonwealth.

As a recommended site stabilization and preservation technique, vegetation management should entail:

- Removal of most small to medium sized brush, saplings, and trees from on, and within archaeological features i.e., cellar holes and their foundation walls; channelized stream beds; mill dams; and historic buildings.
- Removal shall be by cutting as close to the ground as feasible. Vegetation should not be pulled, or otherwise dislodged in a manner that would affect root systems.
- Manual felling of trees may often be the best technique for removal. Where the terrain is sufficiently level and stable to support them, the use of tracked feller-bunchers may be better. These machines have a long reach that limits the need to bring equipment too close to the structure. They hold the tree as it is cut, then pick it up to remove it, thus there is no concern about the direction of the fall. Furthermore, the tracks tend to distribute the weight, thereby limiting compaction to buried deposits.

Cutting contracts should include clauses that direct the logger to take extra care and precautions around cellar holes/foundations etc.